

ments constructed to extend from a point at or below the back slit or opening over the seat and fork to a point on opposite side of the front slit some distance above said fork. 3rd. A reinforcing piece constructed to reinforce the seat of a pair of drawers or other like garment and constitute the facing of the front opening and a portion of the waist band. 4th. The combination with a pair of drawers or other like garment, of the reinforcing piece B. 5th. The combination, with the reinforcing piece B, of a stiffener, such as cord or piece of fabric rolled into a cord for strengthening the front slit near the fork.

No. 15,761. Improvements in Journal Bearings. (*Perfectionnements aux coussinets des tourillons.*)

Tennis V. LeRoy, Utica, N.Y., U. S., 8th November, 1882; for 5 years.

Claim.—1st. A journal bearing for the axles of cars or other vehicles consisting of a shell A provided with the cavity *a* on the under side, and a series of openings, in combination with lead or other soft metal fillings. 2nd. A journal bearing for car axles consisting of a shell A having a cavity *a*, and a series of diagonal openings *b*, in combination with soft metal filling the cavity and diagonal openings.

No. 15,762. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

The Williams Manufacturing Company, Montreal, Que., (Assignee of Eddy T. Thomas, New York, U. S.) 10th November, 1882; for 15 years.

Claim.—1st. The horizontally rotating shaft C and its longitudinally adjustable tapering or conical cam *f*, and cam *f*, combined with the upright lever D₁, the horizontally vibrating lever moved by it, and the feeding device. 2nd. The horizontally rotating shaft C, the hollow cam *f*, its spring and the tapering or conical sleeve cam *f* combined with the feed adjusting or regulating screw *g* fitted into the said shaft. 3rd. The horizontal rotating shaft, the feed adjusting or regulating screw carried thereby, the rib fitted into a slot in the said shaft, and the cam *f* adapted to be moved in one direction by the said screw. 4th. The shaft C, the adjustable tapering or conical cam *f* and cam *f* combined with the upright lever D₂ slotted as described, to both rock and slide on its fulcrum. 5th. The horizontally vibrating shuttle carrying lever combined with the feed-bar moving lever D₁, both arranged to vibrate horizontally about the same stud B₁. 6th. The horizontally vibrating feed actuating lever D₁, the upright lever D₂ connected therewith, shaft C and suitable cams to vibrate the said lever D₂ combined with the horizontally vibrating shuttle carrying lever B, and the stud B₁ arranged to serve as the fulcrum for each of the levers B D₁. 7th. The horizontally vibrating shuttle carrying lever and the lever D, for moving the feeding device, and the stud B common to both, the said levers combined with a conical washer to compensate for wear and the screw. 8th. The feeding device D, the lever D₁ having its forward end extended into the said feeding device, the stud B₁, the loose collar, the point screws and screw *d* combined with a lever D₂ and cams, to both rock the said lever and caused it to be moved longitudinally on its fulcrum. 9th. The feeding device supported near its rear end and provided, near its front end, with an opening combined with the feed actuating lever D₁ provided, at its front end, with the adjustable ball-like termination. 10th. The feeding device and horizontally vibrating lever D₁ and the shaft C and its cams *f*, combined with the upright lever D₂ and its adjustable shoe *e*. 11th. The main shaft C and its fly-wheel combined with an expandible belt pulley composed of two cones or parts adjustable horizontally with relation to each other and with means to adjust the said cones. 12th. The fly-wheel E, its extended hub, the part A of the belt pulley, the opposed part A₁ of the belt pulley, the springs and the nut to adjust the parts A A₁ with relation to each other. 13th. The needle bar actuating shaft C and fly-wheel fast upon it, and the pin or locking device combined with the expandible belt pulley loose with relation to the said fly-wheel and held by the said pin. 14th. The take-up lever pivoted upon the face plate, and the presser bar combined with the rest *p* for the needle thread, between the take-up needle and size of the needle, the said rest being connected and moving vertically with the presser bar, to lower and raise the needle thread with relation to the path of movement of the take up lever, to enable the latter to take up more or less thread, according to variation in the thickness of the material under the presser foot. 15th. The presser foot, its bar and the take-up lever, combined with the thread support connected with, and carried by, and made to rise and fall with the said presser bar, to support the needle thread at a higher or lower level with relation to the cloth plate or bed of the machine, as the presser-foot rides over the material of greater or less thickness. 16th. The presser-bar and its lifting lever *a* combined with the auxiliary lifting lever *m*, and cam to move it at each rotation of the main shaft. 17th. The shaft C, the cam disk thereon, the auxiliary presser-foot lifting lever, its supporting link and means to adjust the same, combined with the lifting lever *n* and the presser-bar. 18th. The foot and its bar, combined with the presser-foot, locking lever or device pivoted upon the presser-bar. 19th. The shuttle provided with the open heel and longitudinal groove combined with the cage fitted to slide in the said groove and having ears to retain the shuttle bobbin in place in the shuttle. 20th. The shuttle shell and its adjustable tension spring provided with the transverse bend, to form an opening for the passage of the shuttle thread under the said spring. 21st. The shuttle shell and its adjustable tension spring provided with the transverse bend or loop *s*, the hook *t* and the prongs 21 22. 22nd. The bed *a* and the pivoted horizontally vibrating shuttle lever, and the vertical lever to operate it, and the horizontally vibrating feed actuating lever and its connected vertical lever, combined with the shaft *e* and its cams, to effect the movement of the shuttle and feed.

No. 15,763. Improvements on Pumps. (*Perfectionnements aux pompes.*)

Frederick Ahrens, Big Rapids, Mich., U. S., 10th November, 1882; for 5 years.

Claim.—1st. The double-acting force pump composed of the cylin-

dric barrels A A₁ having valves B B, plungers C C₁ sliding upon the outside of the barrels and provided with pump rods D D₁, pipes G G₁, triangular air chamber F provided with the valves H H₁ seated upon its inclined walls *g g*, and discharge pipe K.

No. 15,764. Improvements on Pumps. (*Perfectionnements aux pompes.*)

John Sanders, Shelburn, Ont., 10th November, 1882; for 5 years.

Claim.—1st. A pump provided with two suction pipes leading into the main delivery pipe, a foot valve placed at the end of each suction pipe, in combination with a cylinder fitting over each suction pipe and having at its bottom end a valve corresponding with the valve on the end of the suction pipe upon which it fits, the said cylinder being connected by suitable rods to the pump handle upon either side of its fulcrum. 2nd. A piston pump operated by a pivoted handle, a stationary cog-wheel placed around the pivotal point of the handle, in combination with a cog-wheel connected to the piston rod and journaled on the short end of the handle so as to mesh with the stationary cog-wheel.

No. 15,765. Improvements on Coffin and Casket Handles. (*Perfectionnements aux poignées des cercueils et des cassettes.*)

The Meriden Britannia Company, (Assignee of William Pothière,) Hamilton, Ont., 10th November, 1882; for 5 years.

Claim.—A coffin or casket handle covered with velvet, cloth or other kindred substance, when the latter is held between the edges of a tube A.

No. 15,766. Improvements in Vehicle Axles. (*Perfectionnements aux essieux des voitures.*)

John B. Armstrong, Guelph, Ont., 10th November, 1882; for 5 years.

Claim.—1st. In an axle bearing in which a joint is formed between the axle box and a collar on the axle, the combination of a bell mouthed extension formed on the free end of the axle box and projecting beyond the collar, for the purpose of protecting the axle-box frame from mud, grit, etc. 2nd. In an axle bearing in which a joint is formed between the axle-box and a collar on the axle, the combination of a bell mouthed extension, formed on the end of the axle box and having the edge of its inner end curved or bevelled outwardly, so as to allow grit, waste oil, etc., to drop off freely from its bottom side. 3rd. In an axle bearing, in which the axle box is fitted closely to the axle, an oil chamber formed in the axle and provided with an upward oil duct G forming a connection between the oil chamber and oil duct and the axle. 4th. In an axle bearing in which a round oil duct connects the oil chamber with an oil duct formed in the axle, the combination of a wick J placed in the round duct. 5th. An open oil duct F formed on top of the axle and extending through the swelled shoulder C to a point near the washer I, where it meets the upward duct G without interfering with the washer.

No. 15,767. Improvements on Rotary Engines. (*Perfectionnements aux machines rotatoires.*)

Alexander C. Gibson and Edmond Armant, Toronto, Ont., 11th November, 1882; for 5 years.

Claim.—1st. A cylinder provided with an inlet and an outlet port and having a segment *e* of its interior, bored out to correspond with the circle of the piston head A journaled within the cylinder, in combination with the wings E extending clear through the piston head A at right angles to each other, and formed with a loop in their centre, in order to permit them to pass the spindle of the piston. 2nd. A rotary engine having a hollow cylindrical piston head A resting on the segment *e* of the cylinder C, which cylinder is provided with an inlet and an outlet port situated respectively at either end of the segment *e*, the wings E passing through the piston head, in combination with the pressure plate *g* fitted into recesses *f* on each side of the wings E and compressed against the sides of the wings. 3rd. A rotary engine having a hollow cylindrical piston head provided with adjustable wings within a cylinder with covers D, the rings H₁ H₂ fitted into recesses formed in the covers D and pressing respectively against the ends of the piston and wings, in combination with the adjusting screws H₁ H₂, for the purpose of adjusting the pressure of the said rings against the end of the piston head and wings. 4th. In a rotary engine having a hollow cylindrical piston head provided with adjustable wings and revolving within a cylinder, the hole *h* connecting the interior of the piston head provided with the recess *f* behind each gib *g*, in combination with the holes K, each hole being provided with a stop or check valve *l*. 5th. In a rotary engine having a hollow cylindrical piston head provided with adjustable wings and revolving within a cylinder provided with an inlet and outlet port, the combination of a groove or channel *d* leading from one side of the inlet port F in order that the steam may find its way into the space between the wing approaching the outlet port and the wing just passing the inlet port. 6th. In a rotary engine having a hollow cylindrical piston head provided with adjustable wings and revolving within a cylinder provided with an inlet and an outlet port, the combination of a groove or channel *n* extending from the side of the outlet port G to the interior surface of the segment *e*.

No. 15,768. Improvements on Hay Elevators. (*Perfectionnements aux monte-join.*)

William H. Wortman, London, Ont., (Assignee of Frank Ward, Rockford, Ill., U. S., and John Morrow, London, Ont.,) 11th November, 1882; (Extension of Patent No. 8090).

No. 15,769. A Chain Straw Carrier for Thrashing Machines. (*Toile sans fin des machines à battre.*)

Anthony Kline, Bond Head, Ont., 11th November, 1882; (Extension of Patent No. 1805.)